UNITED STATES PATENT AND TRADEMARK OFFICE

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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/552,075	HO ET AL.
	Examiner	Art Unit	
	PIERRE DIVERSE	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 October 2005*.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-39* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-39* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on *04 October 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date *10/04/2005*.
4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____ .

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed on 10/04/2005is in compliance with the provisions of 37 CFR 1.97, and has been considered and copies are enclosed with the Office Action.

Claim Objections

2. Claims 17 and 27 are objected to because of the following informalities: Both claims have the equations written as B + α/B/A and b'x=bx + α/bx/ax. According to the specifications on page 15 the correct form for the equation should be $v_{x,i} = v_i + \alpha|v_i|x_i$.(it should be an absolute value or magnitude symbol not a division symbol) Appropriate correction is required.

3. Claims 23 and 27 are objected to because of the following informalities: Claims 23 and 27 are composed of two sentences. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5.   Claims 23 and 27 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

6.   The term "More preferably" in claims 23 and 27 is a relative term which renders

the claim indefinite. The term "More preferably" is not defined by the claim, the

specification does not provide a standard for ascertaining the requisite degree, and one

of ordinary skill in the art would not be reasonably apprised of the scope of the

invention.

Claim Rejections - 35 USC § 101

7.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

8.   Claims 1 – 20, 29 – 31 and 33 - 38 are rejected under 35 U.S.C. 101 as not

falling within one of the four statutory categories of invention. While the claims recite a

series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must

(1) be tied to another statutory category (such as a particular apparatus), or (2)

transform underlying subject matter (such as an article or material) to a different state or

thing (Reference the May 15, 2008 memorandum issued by Deputy Commissioner for

Patent Examining Policy, John J. Love, titled "Clarification of 'Processes' under 35

U.S.C. 101"). The instant claims neither transform underlying subject matter nor

positively tie to another statutory category that accomplishes the claimed method steps,

and therefore do not qualify as a statutory process. Claims 2 – 20, 29 – 31 and 33 – 38

fall accordingly because of their dependence on claim 1.

Claim Rejections - 35 USC § 103

9.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

10.   Claims 1- 2, 6 – 10, 15, 19 – 21, 24, 28 – 30, 32 and 39 are rejected under 35

U.S.C. 103(a) as being unpatentable over Tian et al., WIPO Wo02/17214 published

Feb. 28, 2002 ("Tian") in view of Muratani U.S. Patent Application Publication

2002/0116618 published Aug. 22, 2002.

11.   Regarding claim 1, Tian discloses 'a method for watermarking a document' (see

page 5, lines 4 – 11). Tian specifically suggests a method for embedding a watermark

in various types of media types, including an image (document).

        'associating said document with an identification number' (see page 5, lines 4 -

6). Tian specifically suggests the use of a media object (document) and an auxiliary

message (identification number);

        'applying a transform to at least a portion of an image of said document to form a

transform of said image' (see page 5, lines 12 – 13). Tian specifically suggests that the

encoding begins by computing a discrete wavelet transform of the image;

'defining a second set of numbers comprising transform coefficients from said transform of said image' (see page 5, lines 28 – 31). Tian specifically suggests evaluating and selecting a subset (second set of numbers) of coefficients;

'forming a modified second set of numbers based on said first set and said second set' (see page 5, lines 28 – 31; page 6, lines 1 - 2; lines 12 - 13). Tian specifically suggests that elements of the message (first set of numbers) are embedded into the subset of coefficients (second set of numbers) by applying an embedding function, the application of the embedding function generates a modified set of numbers;

'substituting said modified second set for said second set in said transform of said image to form a modified transform' (see page 5, lines 28 – 31; page 6, lines 1 - 2; lines 12 - 13). Tian specifically suggests that elements of the message (first set of numbers) are embedded into the subset of coefficients (second set of numbers) by applying an embedding function, because the embedding function embeds the message into the coefficients the coefficients of the transform are substituted by the modified set of numbers; and

'applying an inverse of said transform to said modified transform to thereby produce a modified image of said document' (see page 8, lines 9 - 11). Tian specifically suggests generating an inverse function to generate a watermarked signal;

'whereby said modified image of said document or an output of said modified image constitutes said watermarked document' (see page 8, lines 9 - 11). Tian specifically suggests generating an inverse function to generate a watermarked signal.

It is noted that although Tian discloses pre-processing the message by spreading it over a pseudorandom sequence, Tian does not specifically disclose 'generating a first set of numbers using a seed for said number generation comprising or derived from said identification number'. However, within the same field of endeavor, Muratani does disclose 'generating a first set of numbers using a seed for said number generation comprising or derived from said identification number' (see [0058] - [0059]). Muratani specifically suggests generating a sequence of numbers corresponding to the sequence seed and that the sequence seed can be an identification number.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to combine the teachings of Muratani with those of Tian, because both Tian and Muratani are within the field of digital watermarking (see Tian Abstract and Muratani Abstract), both are from the same field of endeavor. Further, users of Tian would not only be able to embed a message within a media file, they would be able to embed identification information for various purposes (see Muratani [0040]).

12.   Regarding claim 2, Tian discloses 'displaying, scanning or printing said watermarked version of said image of said document' (see page 9, lines 17 - 29). Tian specifically suggests scanning and printing the watermarked image.

13.   Regarding claim 6, Tian discloses 'applying said transform a plurality of times' (see page 7; lines 19 – 24). Tian specifically suggests subdividing the image into block and performing the transform on each block.

14.   Regarding claim 7, Tian discloses 'applying said transform a first time to produce a transformed image' (see page 5, lines 12 – 13). Tian specifically suggests that the encoding begins by computing a discrete wavelet transform of the image; and

'applying said transform to at least a portion of said transformed image to form said transform of said image. (see page 7; lines 19 – 24). Tian specifically suggests subdividing the image into block and performing the transform on each block (each block is a portion of the image).

15.   Regarding claim 8, Tian discloses 'wherein said transform is a wavelet transform' (see page 5, lines 12 – 13). Tian specifically suggests that the encoding begins by computing a discrete wavelet transform of the image.

16.   Regarding claim 9, Tian discloses 'wherein said transform has a wavelet that is orthogonal, biorthogonal and symmetric' (see page 5, lines 14 – 17). Tian specifically suggests that the wavelet can be orthogonal, biorthogonal, multiwavelet, wavelet packet and smooth.

17.   Regarding claim 10, Tian discloses 'said transform has a wavelet that is a Coiflets wavelet, a reverse biorthogonal wavelet, a biorthogonal wavelet, a Haar wavelet or a Daubechies wavelet (see page 5, lines 14 – 17). Tian specifically suggests that the wavelet can be orthogonal, biorthogonal, multiwavelet, wavelet packet and smooth.

18.   Regarding claim 14, Tian discloses 'wherein said second set comprises a

sequence of consecutive coefficients beginning at a predetermined starting point' (see

page 5, lines 29 – 31). Tian specifically suggests selecting all the coefficients in a

certain band, the predetermined start point is the beginning of the sequence of

coefficients in the band and because all are selected they are consecutive.

19.   Regarding claim 19, Tian discloses 'including minimally modifying said second

set when forming said modified second set such that said modified image can be

validated on the basis of said seed after being printed and then digitized once, but such

that said modified image cannot be validated on the basis of said seed if said modified

image is subjected to any additional lossy processing' (see page 8, lines 14 – 23; page

11, lines 16 - 20). Tian specifically suggests that the watermark may be designed to

withstand transformations (printing and scanning) and to degrade in predictable way in

response to transformations like printing, scanning and compression.

20.   Regarding claim 20, Tian discloses 'wherein said document is a passport, a

passport photograph, an identity card, an identity card photograph or a certificate (see

page 13, lines 26 - 29). Tian specifically suggests that the watermarked object can be a

document, card or label.

21.   Regarding claim 21, Tian discloses 'an apparatus for watermarking a document'

(see Tian page 20, lines 25 – 28). Tian specifically suggests that the invention's method

can be implemented in hardware, and performed by a computer or special purpose

digital circuitry.

        'computing means operable to receive said document in digital form and an

associated identification number' (see Tian page 20, lines 25 – 28; page 5; lines 4 - 9).

Tian specifically suggests the use of a computer and inputting a media object and an

auxiliary message.

        The rest of the limitations are similar in scope to those of claim 1, therefore they

are addressed in the discussions of claim 1.

22.   Regarding claim 24, Tian discloses wherein said transform is a wavelet transform

(see page 5, lines 12 – 13). Tian specifically suggests that the encoding begins by

computing a discrete wavelet transform of the image.

23.   Regarding claim 28, Tian discloses 'wherein said computing means is operable

to minimally modify said second set when forming said modified second set such that

said modified image can be validated on the basis of said seed after being printed and

then digitized once, but such that said modified image cannot be validated on the basis

of said seed if said modified image is subjected to any additional lossy processing'

processing' (see page 8, lines 14 – 23; page 11, lines 16 - 20). Tian specifically

suggests that the watermark may be designed to withstand transformations (printing

and scanning) and to degrade in predictable way in response to transformations like printing, scanning and compression.

24.   Regarding claim 29, the combination of Tian/Muratani discloses 'the method of claim 1'. Tian discloses 'A method of checking the validity of a document watermarked' (see page 10, lines 19 – 25). Tian specifically suggests the use for counterfeit deterrence and object identification, counterfeit deterrence checks the validity of the document.

'applying a transform to at least a portion of an image of said document' (see page 9, lines 29 - 30). Tian specifically suggests applying a DWT (transform) to the digital image;

'defining a second set of numbers comprising transform coefficients from said transform of said image of said document' (see page 10, lines 2 – 4). Tian specifically suggests selecting the coefficients; and

'determining what level of correlation exists between said first and second sets of numbers (see page 11, lines 5 – 8; page 12, lines 2 - 4). Tian specifically suggests that the decoder compares the decoded and the computed hashes (first and second set of numbers), in comparing the two numbers a level of correlation between them is sought;

'wherein said document is validated according to said correlation' (see page 11, lines 5 – 8; page 12, lines 2 - 4). Tian specifically suggests that the decoder compares the decoded and the computed hashes (first and second set of numbers) and assess

whether the degradation has occurred and the extent of degradation, a degraded document would be an invalid document.

It is noted that Tian does not specifically disclose 'generating a first set of numbers using a seed for said number generation comprising or derived from an associated identification number'. However Muratani does disclose 'generating a first set of numbers using a seed for said number generation comprising or derived from an associated identification number' (see [0095]). Muratani specifically discloses inputting an objective content (seed) and generating a sequence of numbers based on this inputted content.

25.   Regarding claim 30, Muratani discloses 'generating said first set of numbers comprises randomly generating said first set of numbers' (see [0095], Figure 9; [0098]). Muratani specifically discloses inputting an objective content (seed) and generating a sequence of numbers based on this inputted content using a sequence generator and that the sequence generator has a structure similar to the one used for embedding which, as shown in figure 9, includes a random number generator, therefore the generated set of numbers is randomly generated.

26.   Regarding claim 32, apparatus claim 32 is drawn to the apparatus corresponding to the method of using same as claimed in claims 29. Therefore apparatus claims 32 correspond to method claims 29, and are rejected for the same reasons of obviousness as used above.

27.   Regarding claim 39, the limitations of claim 39 are similar in scope to those of

claim 21 therefore they are addressed in the discussions of claim 21.

28.   Claims 3 -5 and 22 - 23 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Tian et al., WIPO WO-02/17214 published Feb. 28, 2002 ("Tian") in

view of Muratani U.S. Patent Application Publication 2002/0116618 published Aug. 22,

2002 as applied to claim 1 and 21 above, and further in view of Sharma et al., U.S.

Patent No. 6,385,329 published on May 7, 2002 ("Sharma").

29.   Regarding claim 3, although the combination of Tian/Muratani discloses the seed

and the identification number (see Muratani [0058] - [0059]), it is noted that

Tian/Muratani does not specifically disclose 'encrypting said identification number to

produce an encrypted identification number, whereby said seed comprises said

encrypted identification number'. However, within the same field of endeavor, Sharma

does disclose 'encrypting said identification number to produce an encrypted

identification number, whereby said seed comprises said encrypted identification

number' (see column 5, lines 32 – 36). Sharma specifically suggests encrypting the

message with a set of keys before embedding.

       It would have been obvious to one of ordinary skill in the art at the time of

applicant's invention to combine the teachings of Sharma with those of the combination

of Tian/Muratani, because all are directed to digital watermarking (see Tian abstract;

Muratani Abstract and Sharma Abstract). Further, users of Tian/Muratani's invention

would benefit from not only being able to store information in a watermark but to also be able to store information in an encrypted manner thereby increasing security (see Sharma column 5, lines 38 – 41).

30.   Regarding claim 4, Sharma discloses 'encrypting is by means of a one-way encryption function' (see column 5, lines 32 – 36). Sharma specifically suggests the use of an encryption key to encrypt the message, the encryption key corresponds to the hash used in one-way encryption.

31.   Regarding claim 5, Muratani discloses 'first set of numbers have a Gaussian distribution with zero mean and unit variance' (see [0058] - [0059]). Muratani specifically suggests the use of a random number generator to generate the sequence, because the sequence of numbers is generated by a random number generator it is taught that it is a Gaussian distribution with zero mean and unit variance. By definition a random set of number will have a Gaussian distribution with zero mean and unit variance.

32.   Regarding claim 22, Sharma discloses 'a scanner for converting said document in hardcopy form into said digital form, said scanner being in electronic communication with said computing means' (see column 31, lines 58 – 65; figure 20, item 1243). Sharma specifically suggests a scanner for capturing a target image and that it is connected to the computer by a standard interface.

33.   Regarding claim 23, Sharma discloses a 'computing means (see figure 20;

Sharma discloses a computer) is operable to encrypt said identification number to

produce an encrypted identification number, whereby said seed comprises said

encrypted identification number (see column 5, lines 32 – 36). Sharma specifically

suggests encrypting the message with a set of keys before embedding.

'More preferably said computing means is operable to encrypt said identification

number by means of a one-way encryption function' (see column 5, lines 32 – 36).

Sharma specifically suggests the use of an encryption key to encrypt the message, the

encryption key corresponds to the hash used in one-way encryption

34.   Claims 12 – 13, 15 – 16 and 26 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Tian et al., WIPO WO02/17214 published Feb. 28, 2002 ("Tian") in

view of Muratani U.S. Patent Application Publication 2002/0116618 published Aug. 22,

2002 as applied to claim 1 and 21 above, and further in view of Senoh, U.S. Patent No.

6,240,121 published on May 29, 2001 ("Senoh").

35.   Regarding claim 12, Tian/Muratani discloses the transform (see page 5, lines 12

– 13). It noted that Tian does not specifically disclose 'said transform coefficients

correspond to middle frequency components of said transform'. However, within the

same field of endeavor, Senoh does disclose 'said transform coefficients correspond to

middle frequency components of said transform' (see column 6, lines 57 – 62). Senoh

specifically suggests that Bi (transform coefficients) of a subband represent the middle frequency band.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to combine the teachings of Senoh with those of Tian/Muratani, because all three are directed toward the field of watermarking (see Tian Abstract; Muratani Abstract and Senoh Abstract). Further, users of Tian/Muratani's invention would benefit from not only being able to store information in a watermark but to also be able to inset the watermark in a way in which it cannot be easily detected and imposes minimum interference with the original signal, giving the expected result of having a watermark that is hardly visible and difficult to remove (see Senoh column 4, lines 48 - 57).

36. Regarding claim 13, Senoh discloses 'wherein said transform coefficients are obtained from the second level wavelet decomposition HH band of the first level wavelet decomposition LL band' (see figure 2; column 5, lines 61 – 65; column 6, lines 7 – 10; Column 6, lines 19 – 25). Senoh specifically suggests the use of the first level wavelet transform, breaking it down into higher and lower frequencies and using the transform coefficients (Bi) from the HH band (see figure 2).

37. Regarding claim 15, Senoh discloses 'wherein said second set comprises a sequence of consecutive coefficients beginning at a randomly selected starting point' (see column 8, lines 64 - 67). Senoh specifically suggests the use of random numbers

to indicate the position of where to insert the data. Because the position of where to insert the data is random then the starting point is random.

38.　　Regarding claim 16, Senoh discloses 'forming said modified second set of numbers based on a linear combination of said first set and said second set' (see column 7, lines 10 – 26; column 7, lines 62 – 64). Satoh specifically suggests that the watermark data (first set of numbers) is added to the signal (coefficients), the addition of these two teach that it is linear.

39.　　Regarding claim 26 Senoh discloses 'wherein said transform coefficients are obtained from the second level wavelet decomposition HH band of the first level wavelet decomposition LL band (see figure 2; column 5, lines 61 – 65; column 6, lines 7 – 10; Column 6, lines 19 – 25). Senoh specifically suggests the use of the first level wavelet transform, breaking it down into higher and lower frequencies and using the transform coefficients (Bi) from the HH band (see figure 2).

40.　　Claims 17 – 18 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tian et al., WIPO WO02/17214 published Feb. 28, 2002 ("Tian") in view of Muratani U.S. Patent Application Publication 2002/0116618 published Aug. 22, 2002 as applied to claim 1 and 21 above, and further in view of Kim et al., "A Robust Wavelet-Based Digital Watermarking Using Level-Adaptive Thresholding" published in 1999 ("Kim").

41.   Regarding claim 17, the combination of Tian/Muratani discloses 'the method as claimed in claim 1' (see above rejection of claim 1). It is however noted that the combination of Tian/Muratani does not specifically disclose 'wherein, if said first set is represented by A = {a1, a2, ..., an} and said second set is represented by B = {b1, b2, ..., bn}, then said modified second set B' = {b '1, b '2, ..., b ',} = B + α|B|A, wherein each b'x = bx + α |bx| ax'. However, within the same field of endeavor, Kim does disclose 'wherein, if said first set is represented by A = {a1, a2, ..., an} and said second set is represented by B = {b1, b2, ..., bn}, then said modified second set B' = {b'1, b'2, ..., b'n} = B + α|B|A, wherein each b'x = bx + α |bx| ax' (see section 2.2 and equation 3). Kim specifically discloses the equation V'i = Vi + αVi Xi where Vi (B) is the coefficients, Xi (A) is a Gaussian distributed random vector and α is a scaling factor.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to combine the teachings of Tian/Muratani with those of Kim, because all three are directed to the field of watermarking (see Tian Abstract, Muratani Abstract and Kim Abstract). Further, users of Tian/Muratani would not only be able to embed a message within a media file, but to do it using an adaptive scale factor that improves performance of robustness and invisibility (see Kim section 2.2, last paragraph).

42.   Regarding claim 18, Kim discloses 'selecting α according to the nature of said document and desired level of security' (see section 2.2). Kim specifically suggests and

adaptive scale factor α that is tuned to the decomposition level to avoid degradation of the watermark image; the avoidance of the degradation of the watermark image teaches that the level of security (strength of the watermark) is taken into account and because the decomposition level is dependent on the image then the nature of the document is also taken into account.

43.   Regarding claim 27, Kim discloses 'wherein said computing means is operable to form said modified second set of numbers based on a linear combination of said first set and said second set. More preferably, if said first set is represented by A = {al, a2, .., an} and said second set is represented by B = {b1, b2, ..., bn}, then said modified second set B'= {b'1, b'2, ..., b'n} = B + α |B|A, wherein each b'x = bx + α |bx| ax. (see section 2.2 and equation 3). Kim specifically discloses the equation V'i = Vi + αVi Xi, this is a linear combination of the sets of numbers, where Vi (B) is the coefficients, Xi (A) is a Gaussian distributed random vector and α is a scaling factor.

44.   Claim 31 and 33 - 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tian et al., WIPO WO02/17214 published Feb. 28, 2002 ("Tian") in view of Muratani U.S. Patent Application Publication 2002/0116618 published Aug. 22, 2002 as applied to claim 1 and 21 above, and further in view of Perry U.S. Patent Application Publication No. 2002/0012445 published Jan 31, 2002.

45.   Regarding claim 31, The combination of Tian/Muratani discloses 'a method of

checking the validity of a document watermarked' (see Tian page 10, lines 19 – 25).

Tian specifically suggests the use for counterfeit deterrence and object identification,

counterfeit deterrence checks the validity of the document. It is noted that the

combination of Tian/Muratani does not specifically disclose 'transmitting said document

over a computer network to a verification system for checking', and 'receiving a result of

said checking over said computer network from said verification system'. However,

within the same field of endeavor, Perry does disclose 'transmitting said document over

a computer network to a verification system for checking' (see

[0040];[0078];[0080];[0081]). Perry specifically suggests that the scanning of the

document is done at the user's location, that embedded data is validated at a remote

location and that the connections can be made via public or private network; and

'receiving a result of said checking over said computer network from said

verification system' (see [0035]; [0040];[0078];[0080];[0081]). Perry specifically

suggests that the output of the validation process in conveyed to the user and that the

user location and validation system are connected via a network.

It would have been obvious to one of ordinary skill in the art at the time of

applicant's invention to combine the teachings of Perry with those of the combination of

Tian/Muratani, because all three are directed toward the field of watermarking (see Tian

Abstract, Muratani Abstract and Perry Abstract). Further, users of the combination of

Tian/Muratani would not only be able to not only be able to embed a message within a

media file, but would also be able to have the encoding and decoding systems be portable and connected to a network (see Perry paragraph [0081])

46.   Regarding claim 33, The combination of Tian/Muratani discloses the method of claim 1, as discussed above. Further Tian discloses 'A method of checking the validity of a document' (see page 10, lines 19 – 25). Tian specifically suggests the use for counterfeit deterrence and object identification, counterfeit deterrence checks the validity of the document. It is noted that the combination of Tian/Muratani does not specifically disclose 'over a computer network' nor 'a user electronically submitting a document that has been provided with a watermark according, or a copy of said document, via said computer network to a verification system; said verification system electronically checking the validity of said document according to said the watermark and legible identification information appearing on said document; and said verification system electronically transmitting to said user or a nominated alternative user a result of said checking of said validity'.

However, within the same field of endeavor, Perry does disclose 'a user electronically submitting a document that has been provided with a watermark or a copy of said document (see [0032];[0033]; Perry specifically suggests scanning a scanning a product with an embedded watermark), via said computer network to a verification system (see [0040];[0074];[0078];[0080];[0081]). Perry specifically suggests that the scanning of the document is done at the user's location, that embedded data is

validated at a remote location (verification system) and that the connections can be made via public or private network;

'said verification system electronically checking the validity of said document according to said the watermark and legible identification information appearing on said document' (see [0099];[0032]; [0033]; [0034]). Perry specifically suggests comparing information in the document to information extracted from the watermark to validate a passport (document) and

'said verification system electronically transmitting to said user or a nominated alternative user a result of said checking of said validity' (see [0035]; [0040];[0078];[0080];[0081]). Perry specifically suggests that the output of the validation process in conveyed to the user and that the user location and validation system are connected via a network.

47.   Regarding claim 34, Perry discloses 'legible identification information comprises or includes a name of a person to whom said document pertains' (see [0078]; [0099]). Perry specifically suggests using the system in the verification of passport information by comparing watermark information with information elsewhere in the document. It is commonly known in the art that the name of the bearer of the passport is part of the legible information contained on the passport.

48.   Regarding claim 35, Perry discloses 'further including said user inputting said

legible identification information' ([0032]). Perry specifically suggests that the user

inputs the product identifier (legible identification information).

49.   Regarding claim 36, 'further including said verification system employing

character recognition and thereby extracting said legible identification information from

said document' (see [0078]). Perry specifically suggests that the decoder may compare

information in the watermark with information read automatically from other machine

readable features on the document or printed on the face of the document. To compare

information printed on the face of the document with the watermark teaches that

information is extracted via character recognition.

50.   Regarding claim 37, 'wherein said document comprises a certification of

academic attainment and said legible identification information comprises or includes

any one or more of: the name of the holder of said attainment and the name of said

attainment' (see [0116]; [0117]). Perry specifically suggests authenticating diplomas,

certificates of mastery from a class, professional licenses, and authenticates the bearer

of the document to verify that the person is the valid owner.

51.   Regarding claim 38, Perry discloses 'wherein said computer network comprises

the internet or an intranet' (see [0081]). Perry specifically suggests that the net work

can be private (intranet) or public (internet).

52.   Claims 11 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Tian et al., WIPO WO-02/17214 published Feb. 28, 2002 ("Tian") in view of

Muratani U.S. Patent Application Publication 2002/0116618 published Aug. 22, 2002 as

applied to claim 1 and 21 above, and further in view of Wei et al., "Generalized Coiflets:

A New Family of Orthogonal Wavelets" published on 1998 ("Wei").

53.   Regarding claim 11, Tian/Muratani discloses the use of wavelet transforms as

well as suggesting that there are several different types of wavelet transforms that can

be used in an implementation of the invention (see Tian page 5, lines 14 - 17). It is

noted that the combination of Tian/Muratani does not specifically disclose 'wherein said

transform has a wavelet that is a Coiflets wavelet of order 4'. However Wei does

disclose 'wherein said transform has a wavelet that is a coiflets wavelet of order 4' (see

section 1; figure 3 and section 7). Wei discloses a coiflets wavelet of order 4. Wei

further teaches that Coiflets are an existing family of wavelets (see Abstract).

        Therefore it would have been obvious to one of ordinary skill in the art to

combine the teachings of Tian/Muratani and chose to use a known wavelet like coiflets

of order 4, because coiflets have been shown to be excellent for the sampling

approximation of smooth functions (see Wei section 1).

54.   Regarding claim 25, Tian/Muratani discloses the use of wavelet transforms as

well as suggesting that there are several different types of wavelet transforms that can

be used in an implementation of the invention (see Tian page 5, lines 14 - 17). It is noted that the combination of Tian/Muratani does not specifically disclose 'wherein said computing means is operable to perform said transform with a wavelet that is a Coiflets wavelet of order 4'. However Wei does disclose 'wherein said transform has a wavelet that is a coiflets wavelet of order 4' (see section 1; figure 3 and section 7). Wei discloses a coiflets wavelet of order 4. Wei further teaches that Coiflets are an existing family of wavelets (see Abstract).

Therefore it would have been obvious to one of ordinary skill in the art to combine the teachings of Tian/Muratani and chose to use a known wavelet, like coiflets, because coiflets have been shown to be excellent for the sampling approximation of smooth functions (see Wei section 1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PIERRE DIVERSE whose telephone number is (571)270-3911. The examiner can normally be reached on Monday to Thursday 8:00am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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